FIRST LEGO LEAGUE

CHALLENGE

GUIDE FOR DISTANCE EDUCATION

FIRST

LEGO education

Overview

Due to the COVID-19 pandemic, we know that teachers will encounter unique challenges during the *FIRST*® LEGO® League Challenge RePLAY℠ season. This guide provides specific guidance to help you implement *FIRST* LEGO League Challenge with your students remotely.

Using the remote learning platform Google Classroom, *FIRST*® Robotics Competition team - LAUNCH TEAM 6352 redesigned the *FIRST* LEGO League Challenge experience using the existing program content. This option can be used by teachers, coaches, and parents to allow students to have a full and exciting STEM experience.

This option has both synchronous (live remote meeting using platforms like Zoom) and asynchronous (independent activities students do using Google Classroom and hands-on materials) elements so that you can hold team meetings or have in-classroom lessons for short periods of time and then participants can work individually.

This guide provides tips and information on the activities and how you can use them for the different implementation models you may be experiencing

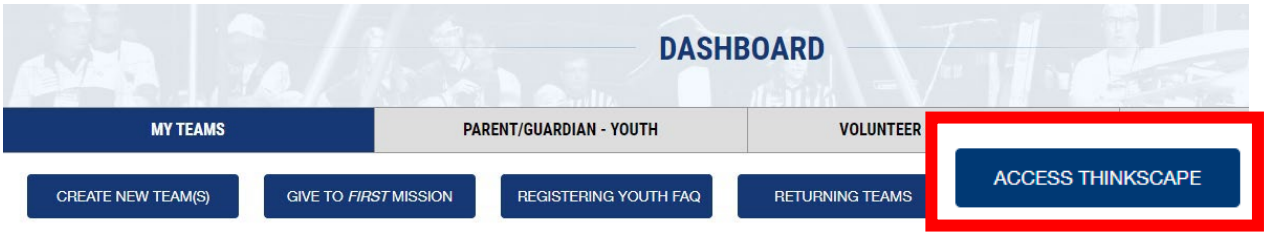
Use this checklist to help you get started and guide you toward success.

- ❑ Determine how many students will participate in the program at a time – Small groups? Whole class or team? All classes in your grade?
- ❑ Review the material management section to determine what materials you need for *FIRST* LEGO League Challenge at Home. (Page 4)
- ❑ Register a *FIRST* LEGO League Challenge Team or Class Pack. (All other countries)
- ❑ Ensure you have received all the materials needed to run the program. (Page 4)
- ❑ Review using Google Classroom and Remote Video Tools. (Page 3)
- ❑ Determine how you will distribute materials to remote students. (Page 4)
- ❑ Decide your schedule. Will you lead the sessions through live instruction, recorded videos, or written tasks? (Page 5)
- ❑ Consider using *FIRST* LEGO League Challenge as a tool for teaching STEM concepts and for active, hands-on brain breaks.
- ❑ Plan a remote celebration event. (Page 6)
- ❑ Communicate with families and engage them in *FIRST* LEGO League Challenge. (Page 6)

How to Get Started

For North America Only

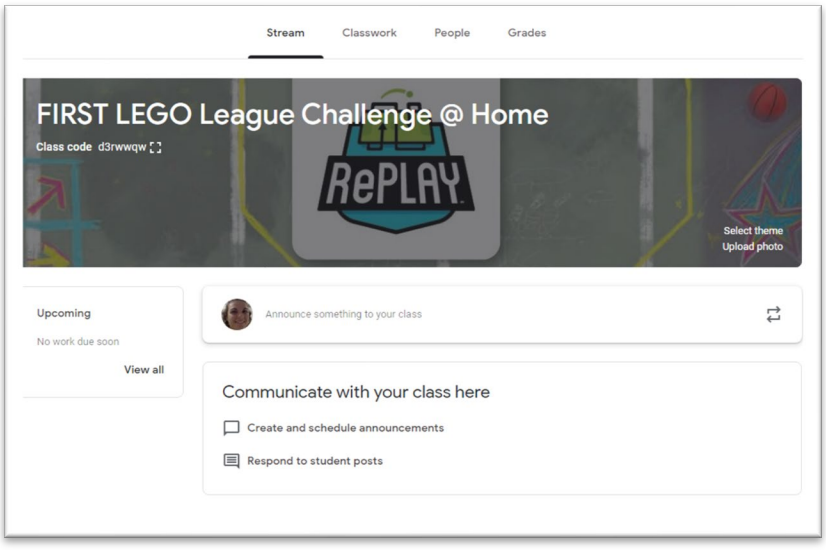
Once you have registered your team or Class Pack, you will be able to navigate to the Thinkscape course, using the button on your *FIRST* dashboard.



Inside Thinkscape, you will find the copy of this guide and the options for accessing the Google Classroom activities.

Setting up and Using Your Google Classroom Account

Please see the guide inside your Thinkscape account or from your Program Delivery Partner for the link to access the Challenge at Home, Google Classroom materials.



Material Management

This content experience is designed for you to send home a robot set and portion of the Challenge set for each student. Each kit could rotate between a small subset of students that are assigned to it or you could create an at-home kit of materials to send home with each student that are not returned until the end of the season or class.

The chart below shows the quantity of students you can serve with (1) Challenge set. If you have multiple Challenge sets you can duplicate kits to serve more students.

	6 Students	4 Students
Kit 1	Slide, Tires	Slide, Tires, Row Machine
Kit 2	Bench, Step Counter	Bench, Step Counter, Phone
Kit 3	Boccia Share, Pull Up Bar	Boccia Share and Aim, Pull Up Bar
Kit 4	Basketball, Treadmill	Basketball, Weight Machine, Treadmill
Kit 5	Weight Machine, Phone	n/a
Kit 6	Boccia Aim, Row Machine	n/a

Each student will also need:

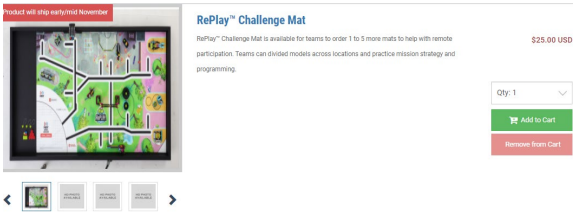
- A LEGO® Education Robot Set.
- Access to the internet and a computer.
- Challenge mat – you can purchase additional mats or tape off the mat gridlines using blue tape or print the wireframe provided in the classroom on a large format printer.

Material Management Tips

- If you plan to share materials between cohorts of students, allow time and budget for cleaning in between groups of students, inventorying sets, and replacing missing parts. Review LEGO Education's Managing Today's Classroom page for additional resources.
- Provide the building instructions to the Challenge set mission models. You could use the card inserts for the students to do an inventory of their robot sets. You may wish to have your students' parents/ guardians sign an agreement about returning materials, including a statement of what happens if any materials are missing. This example is for *FIRST* LEGO League Explore but could be modified for *FIRST* LEGO League Challenge at Home.
- Replacement LEGO® elements can be purchased from LEGO Bricks & Pieces. Enter set number found on your robot set to locate the correct pieces.

Additional Materials

Once you are a registered Challenge team or Class Pack, you can purchase additional RePLAY Challenge sets.



Scheduling

FIRST LEGO League Challenge is designed to have 12 sessions that each last about an hour. Each session is broken into tasks, including an introduction, robot and/or project tasks, and sharing, depending on the session. In remote instruction, you will likely need to modify the standard schedule to match your structure.

Scheduling Factors to Consider

- How many students will participate in Challenge at one time?
  - Will every student complete the session activities at the same time?
  - Will some materials be shared across the students at different times?
  - Will every student have a LEGO Education robot set?
- How will the students work independently through the remote session tasks?
  - Will you deliver any session tasks through live virtual instruction?
  - Will you record any videos to give additional instructions?
  - How will the students complete the Sharing task at the end of each session?
- Will you assign individual session tasks to be completed in one session or spread out the tasks within one session over multiple days?
- What help and guidance will the students have available at home to complete the session tasks independently in an asynchronous setting?

Session Layout

Below is a breakdown of the tasks students will complete in each session. Each session could be completed weekly, or the sessions could be compressed into a daily schedule. The content for Challenge can easily be extended beyond the 12 sessions outlined.

Session	Session Tasks	Session	Session Tasks
1	• Introduction to Challenge • Robot Activity 1 • Share	**7**	• Core Values Activity • Project Research • Share
2	• Core Values Activity • Project Spark 1 • Share	**8**	• Choose Project Solution • Robot Lesson 4 and 5 • Share
3	• Goal Setting and Team Progress • Robot Activity 2 • Share	**9**	• Core Values Activity • Project Planning • Share
4	• Core Values Activity • Project Spark 2 • Share	**10**	• Core Values Activity • Solve Missions • Share
5	• Core Values Activity • Robot Lesson 3 and Pseudocode • Share	**11**	• Core Values Activity • Prepare Presentation • Solve Missions • Share
6	• Core Values Activity • Choose Problem • Share	**12**	• Core Values Activity • Present Presentation • Run a Match • Share

Holding a Remote Celebration Event

The tournament described in session 12 of the Team Meeting Guide may look different for remote students than it would in person. The goal of the event is to have students share their work and feel recognized for what they accomplished during the Challenge sessions.

Here are few ideas to help you plan your remote celebration:

- If you have a registered team, contact your Program Delivery Partner to find out the format for your tournament.
- If you are a Class Pack customer, check out the Class Pack Tournament Guide for guidance on running your own event.
- No matter the format of the final event, it's important for the team to have FUN and to feel that their work is valued and celebrated.

If you are not attending an official event or planning your own event, you can still run your own celebration or have an informal sharing event.

Plan how this will take place ahead of time. In session 12, the outcomes are:

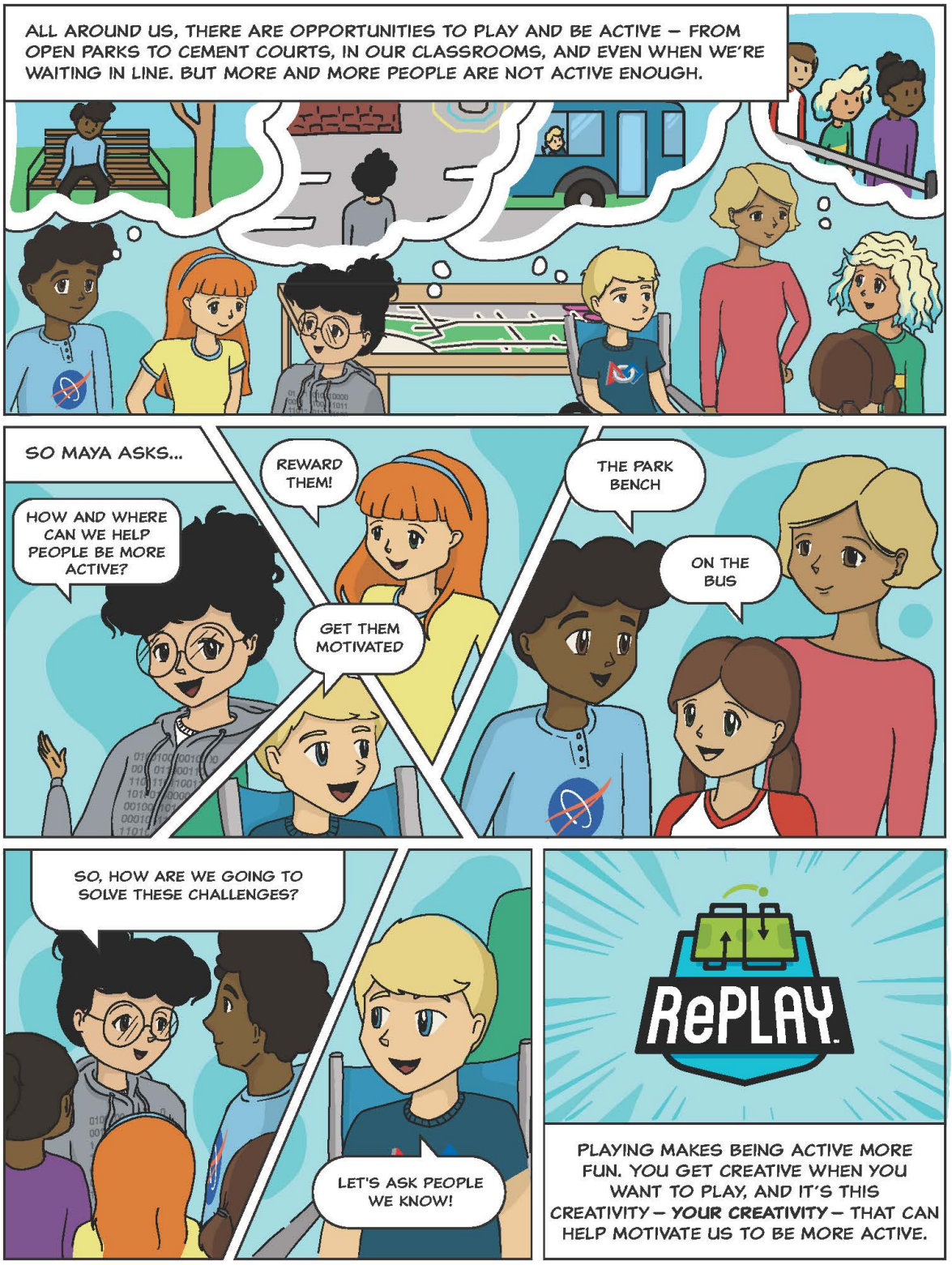
- The team will practice their Innovation Project presentation.
- The team will practice their Robot Design presentation and robot game match.

Ideas for preparing for your remote celebration:

- Have each student demonstrate solving the missions they have completed by recording, taking pictures, or doing a live run during a meeting.
- Use the remote meeting tools that your students are familiar with for your celebration event. For example, if your class uses Zoom, it will be easiest for your students and families if they also join your celebration event through Zoom.
- Have students explain what they learned during the sessions, talk about their favorite part of *FIRST* LEGO League Challenge or describe their team's Innovation Project and robot solutions. Parents can share what their students learned or how they grew during *FIRST* LEGO League Challenge. Consider asking for parent volunteers to be interviewed in advance to keep the celebration running smoothly.
- Collect student pictures through the sessions, including during class meetings, builds, and Engineering Notebook pages. Share the pictures in a slideshow during the celebration, accompanied by music or explanations.
- Remember to include opportunities for the students to move during your remote celebration event. Many *FIRST* LEGO League events include a dance party!
- Be sure to recognize the students by awarding them recognition certificates. You can send the certificates digitally, mail printed certificates, or include printed certificates with other materials sent home to students. You may wish to give out the certificates at the same time the materials are returned.

Support for Parents and Caregivers

Parents take on an even more critical role in students' lives during remote instruction. While many parents monitor their children's play and schoolwork, they may not realize the learning and developing that happens through play and they may not be used to playing together. As educators, you can guide your students' families to approach the Challenge sessions with a playful mindset. When Challenge is done remotely, it can provide additional opportunities for parents to play with children and provide the children more chances to play. The activities can give parents chances to model the Habits of Learning, including creativity, persistence, empathy, and problem solving. Playing also increases happiness and reduces stress for adults!



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